

CLAIMS

What is claimed is:

1. A method of manufacturing an on-chip transformer
5 balun, the method comprises:

creating, on a substrate, a primary winding having at least
one primary turn, wherein the at least one primary turn is
substantially symmetrical, and wherein the primary winding
10 is on at least one dielectric layer; and

creating, on the substrate, a secondary winding having at
least one secondary turn, wherein the at least one
secondary turn is substantially symmetrical, and wherein
15 the secondary winding is on at least one other dielectric
layer and is magnetically coupled to the primary winding.

2. The method of claim 1, wherein the creating of the
primary winding further comprises:

20 creating a plurality of turns on a first one of the at
least one dielectric layer;

creating a plurality of metal bridges on a second one of
25 the at least one dielectric layer; and

operably connecting the plurality of metal bridges to the
plurality of turns to provide the primary winding.

- 30 3. The method of claim 1, wherein the creating of the
secondary winding further comprises:

creating a plurality of turns on a first one of the at least one other dielectric layer;

creating a plurality of metal bridges on a second one of
5 the at least one other dielectric layer; and

operably connecting the plurality of metal bridges to the plurality of turns to provide the secondary winding.

10 4. The method of claim 1 further comprises:

creating the primary winding to include an interwoven spiral-type primary inductor; and

15 creating the secondary winding to include an interwoven spiral-type secondary inductor that is substantially symmetrical to the primary winding.

5. The method of claim 1 further comprises:

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creating the interwoven spiral-type primary inductor to include a first number of multiple turns; and

creating the interwoven spiral-type secondary inductor to
25 include a second number of multiple turns.

6. The method of claim 1, wherein the creating of the secondary winding further comprises:

30 connecting a center tap of the secondary winding to ground to provide a differential signal at end ports of the secondary winding.

7. The method of claim 1, wherein the creating of the primary winding further comprises:

5 creating at least one turn on a first one of the at least one dielectric layer;

creating at least one other turn on a second one of the at least one dielectric layer;

10

creating a plurality of vias; and

operably connecting the at least one turn on the first one of the at least one dielectric layer in parallel to the at least one other turn on the second one of the at least one dielectric layer using the plurality of vias to provide the primary winding.

8. The method of claim 1, wherein the creating of the secondary winding further comprises:

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creating at least one turn on a first one of the at least one other dielectric layer;

25 creating at least one other turn on a second one of the at least one other dielectric layer;

creating a plurality of vias; and

30 operably connecting the at least one turn on the first one of the at least one other dielectric layer in parallel to the at least one other turn on the second one of the at

least one other dielectric layer using the plurality of vias to provide the secondary winding.